



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/404,245 09/22/99 HARRIS

F 8675-5

000826 IM52/1107
ALSTON & BIRD LLP
BANK OF AMERICA PLAZA
101 SOUTH TRYON STREET, SUITE 4000
CHARLOTTE NC 28280-4000

EXAMINER

REFUMQ, J

ART UNIT

PAPER NUMBER

1771

DATE MAILED:

11/07/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/404,245

Applicant(s)

HARRIS ET AL.

Examiner

Jenna Befumo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-33,48-59 and 63-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-33,48-59 and 63-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Amendment A, submitted as Paper No. 9 on August 17, 2001, has been entered. Claims 1 – 16, 34 – 47 and 60 – 62 have been cancelled. Claims 17, 24, 28, 30, 32, 48, and 59 have been amended and claims 63 – 66 have been added. Therefore, the pending claims are 17 – 33, 48 – 59, and 63 – 66.
2. Amendment A is sufficient to withdraw the 35 USC 112 2nd rejections set forth in sections 8, 9, 11 and 12 of the previous Office Action. The rejection set forth in section 10 of the previous Office Action is maintained below.
3. The arguments in Amendment A, page 12 – 15, are sufficient to withdraw the 35 USC 103 rejections to claims 48 – 58 over Makimura et al. in view of Sasse et al. and claim 56 over Makimura et al. in view of Gillespie et al. since it would not be obvious to combine the references because Makimura et al. is a splittable fiber split by dissolving a third component and Sasse et al, and Gillespie et al, are splittable fibers split due to different surface energies in the components.

Election/Restrictions

4. Applicant's election without traverse of Group II, claims 17 – 33 and 48 – 59, in Paper No. 9 is acknowledged.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 1771

6. Claims 17 – 33 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation that the weight ratio of the non-elastomeric microfilaments within the fiber bundle is substantially identical to the weight ratio of the non-elastomeric component within the multi-component fiber, in claims 17, 28, and 30, is not supported by the specification. Claims 18 – 27, 29, and 31 – 33 are rejected due to their dependency on claim 17, 28, or 30.

7. Claim 63 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation that the split elastomeric and non-elastomeric components can be recombined to cumulatively define the approximate cross-section of said multi-component fiber is not supported by the specification.

8. Claim 64 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation that the elastomeric and non-elastomeric exhibit comparable deniers is not supported by the specification.

9. Claim 65 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the

Art Unit: 1771

claimed invention. The limitation that the denier of the fiber bundle is substantially identical to the denier of the multicomponent fiber is not supported by the specification.

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 17 – 27, 30 – 33, 48 – 59, and 63 – 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. The phrase “sufficiently different” in claims 17, 30, 48, 59, and 63 – 66 is indefinite. What solubility difference would be “sufficiently different”? At what point does the difference in solubility parameters become “sufficiently different”? Claims 18 – 27, 31 – 33, and 49 – 58 are rejected due to their dependence on claims 17, 30, or 48.

13. The term “a yarn comprising the fiber bundle” in claims 26 and 29 is indefinite. As set forth in section 10 of the previous Office Action, it is unclear what is the difference between a “yarn” and a “fiber bundle.” In Amendment A, page 7, the Applicant cites a section of the Specification, page 4, lines 13 – 15. However, this section does not refer to either “fiber bundles” or “yarns.” Applicant also provides a definition of the term “yarn” which states that a yarn is a continuous strand of textile fibers, filaments, or material in a suitable form. The suitable forms include a number of fibers twisted together (spun fibers), a number of fibers laid together without twist, or a number of filaments laid together with a degree of twist. Hence, a “yarn” is a plurality of fibers or filaments grouped together. Therefore, wouldn’t a “fiber bundle” inherently be a “yarn?” Further, wouldn’t any of the suitable forms mentioned above, twisted filaments, non-twisted filaments, or a spun fibers be a “fiber bundle”, since they all

Art Unit: 1771

contain fibers “bundles” together? Therefore, what is the Applicant using as the definition of “yarn” and “fiber bundle” which differentiates the terms from each other? Claim 27 is rejected for its dependency on claim 26.

14. The phrase “arranged in distinct unocclusive cross-sectional segments” in claims 48 and 59 are indefinite. It is unclear what the Applicant considers to be an “unocclusive” arrangement. What is the definition of “unocclusive,” not blocking off? What is not being blocked off?

Claims 49 – 58 are rejected due to their dependency on claim 48.

15. The phrase “microfilaments exhibit comparable deniers” in claim 64 is indefinite. What are the deniers “comparable” to? Are the microfilaments deniers comparable to each other? Are the microfilament deniers comparable to the deniers of the segments in the multicomponent fiber before it was split?

Claim Rejections - 35 USC § 102

16. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

17. Claims 17 – 26, 28 – 33, 48 – 59, and 63 – 65 are rejected under 35 U.S.C. 102(b) as being anticipated by Makimura et al. (4,663,221).

Claims 17 – 26, 28 – 33, and 59 are rejected over Makimura et al. for the reasons set forth in section 14 of the previous Office Action. The additional limitation, cited in claims 17, 28, and 30, that the fiber bundle has a weight ratio of non-elastomeric microfilaments within the fiber bundle substantially identical to the weight ratio of the non-elastomeric component within the multicomponent fiber, is not given patentable weight at this time. The Applicant is claiming the fiber bundle and not the multicomponent fiber from which the fiber bundle is made. Thus, only

Art Unit: 1771

the structure of the fiber bundle is given weight and not the structure or properties of the multicomponent fiber. Therefore, claims 17 – 26, and 28 – 33 are rejected.

Claims 48 – 58 are rejected as a 102 instead of a 102/103 rejection, since the difference in solubility parameters is inherent to the material used. Since the elastic and non-elastic components taught by Makimura et al. are different polymers materials they will inherently have solubility parameters which are different. Further, since Makimura et al. discloses using the same materials as taught by the Applicant, the elastic and non-elastic components of Makimura et al. will inherently have the claimed difference solubility parameters .

Claims 48 – 55 and 57 – 59 which include the limitation that the elastomeric and non-elastomeric are arranged in distinct unocclusive cross-sectional segments, are also rejected over Makimura et al. The Makimura et al. fiber, as shown in Figures 1 – 3, have the elastomeric and non-elastomeric components arranged in an unocclusive manner. The fiber taught by Makimura et al. has a third component which is located between the elastomeric and the non-elastomeric components. Therefore, the elastomeric and the non-elastomeric components are prevented from completely surrounding the other component. Claim 56 is also rejected since the fiber shown in Figure 3 of Makimura et al. is a type of segmented round fiber.

Additionally, the limitation in claim 63 that the elastomeric components and non-elastomeric components can be recombined to form the approximate cross-section of the multicomponent fiber is also not given patentable weight at this time. The patentability of the fiber bundle is based on the final structure of the bundle itself and not the multi-component fiber it was produced from. Also, the limitation does not positively claim that the fiber bundle has been recombined to define approximate cross-section of the multicomponent fiber, but that it *can*

Art Unit: 1771

be recombined. Finally, the fiber bundle formed from the multicomponent fiber in Figure 3 could be recombined to form the approximate cross-section of the multicomponent fiber. Thus, claim 63 is rejected.

Further, claim 64 recites the limitation that the elastomeric and non-elastomeric microfilaments have “comparable” deniers. In other words, the deniers are capable of being compared. It has been held that an element is “capable of” performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138. In the alternative, the microfilaments formed from the multicomponent fiber taught by Makimura et al. would have deniers that are comparable to other microfilaments or even the denier of the elastomeric or non-elastomeric components in the multicomponent fiber before it was split. Thus, claim 64 is rejected.

Finally, the limitation in claim 65 that the denier of the fiber bundle is substantially identical to the denier of the multicomponent fiber is not given patentable weight at this time. The Applicant is claiming the fiber bundle and not the multicomponent fiber from which the fiber bundle is made. Thus, only the structure of the fiber bundle is given weight and not the structure or properties of the multicomponent fiber. Therefore, claim 65 is rejected.

18. Claim 66 is rejected under 35 U.S.C. 102(b) as being anticipated by Kuroda et al. (4,405,686).

Kuroda et al. discloses a conjugate filament yarn comprising an elastomeric segment and a non-elastomeric segment. Kuroda et al. discloses using polyurethane elastomers as the elastomeric component (column 1, lines 30 – 35). The non-elastomeric component can be polyamide or polyester (column 1, lines 59 – 60). The two components will inherently have the

Art Unit: 1771

claimed solubility difference since the materials used by Kuroda et al. are the same as those taught by the Applicant. Also the bicomponent fiber is splittable, since the limitation only requires that the fiber is capable of being split. Thus, as noted above this is not a positive limitation and only requires the ability to be split, which it is capable of since the fiber can be cut into more than one piece.

The recitation that the elastically deformed elastomeric component is capable of complete recovery is not given patentable weight at this time. First, the fiber is claimed in the bicomponent state before it has been elastically deformed to form the fiber bundle, thus it is not a positive limitation and is not given patentable weight at this time. Second, as noted above, it has been held that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. Thus, it is not a patentable limitation. In the alternative, Kuroda et al. discloses that the polyurethane elastomer has a rubber-like elasticity, thus, the elastomer would inherently be capable of complete recovery (column 1, line 35).

Additionally, the recitation that the plastically deformed second component maintains the same length after tension is released is not given patentable weight at this time. First, this is not a positive limitation since the Applicant claims the fiber the bicomponent state and is not positively claiming the fiber after it has been put under stresses to plastically deform the second component. The Applicant is claiming the bicomponent fiber itself and not the bicomponent fiber under stress or the bicomponent fiber after stress has been applied to the fiber and it is split. However, in the alternative, it is noted that the thermoplastic polymer is inherently plastically deformed upon spinning of the bicomponent fiber. The thermoplastic material will also inherently maintain it's length upon release of tensions. Therefore, claim 66 is rejected.

Art Unit: 1771

19. Claims 17 – 26, 28 – 33, 48 – 59 and 63 – 66 are rejected under 35 U.S.C. 102(b) as being anticipated by Gillespie et al. (5,783,503).

Gillespie et al. discloses a multicomponent fiber with splittable components (abstract). The multicomponent fiber can be used to produce nonwoven fabrics, textile yarns, or tow for staple (column 3, lines 19 – 21). The fiber can be segmented pie/wedge fibers as shown in Figures 1 and 2, with eight segments total. Or the fibers can have more or less than eight components (column 4, lines 26 – 28). Also, as shown in Figures 1 and 2, the components can be in approximately a 50/50 ratio of component a, **22**, to component b, **24** (column 4, lines 21 – 22). The filaments produced are either sub-denier filaments, 1 denier per filament or less, or micro-denier filaments, 0.1 to 0.3 denier per filament (column 6, lines 24 – 30).

Gillespie et al. disclose that the ease with which the components form and then split depends on the miscibility of the components (column 4, lines 54 – 60). The miscibility of components is related to the solubility parameters of the components. Gillespie et al. teach suitable polymers include polyolefins, polyesters, polyamides, and thermoplastic elastomers. Specific materials include, polyolefins such as polypropylene and polyethylene, or elastomers such as polyurethane (column 5, lines 5 – 17). Gillespie et al. disclose using the elastomers as components in the fibers to improve stretch properties of the fiber or fabric and also to promote splitting of the components (column 5, lines 21 – 24).

Since Gillespie et al. discloses using the same components as the elastomeric and the elastomeric components taught by the Applicant, then the components of Gillespie et al. will inherently have the claimed difference in solubility parameters.

Since Gillespie et al. teach splitting the components via a heated gaseous medium (column 2, lines 66 – 67), the fiber bundle would inherently have the same amount of material as the multicomponent fiber and the elastomeric components would inherently be non-bulked while the non-elastomeric components would inherently be bulked. Therefore, the weight ratio of non-elastomeric filaments within the fiber bundle is substantially identical as the weight ratio of the non-elastomeric components within the multicomponent fiber. Thus, claims 17 – 26, and 28 – 31 are anticipated. Claims 32 and 33 are rejected with claim 29 since the intended use of the fabric, a synthetic suede or filtration media, fail to add any further structure to the fabric.

The fiber shown in Figure 1 is in an unocclusive configuration since all the components are on the outside of the fiber. Therefore claims 48 – 59 are anticipated.

Finally, since the components do not lose material and all the components of the fiber are present in the fiber bundle after splitting claims 63 – 66 are anticipated.

Claim Rejections - 35 USC § 103

20. Claim 27 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Makimura et al. for the reasons of record.

21. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gillespie et al.

The features of Gillespie et al. have been set forth above. Claim 27 is rejected over Gillespie et al. for similar reasons set forth in section 17 of the previous Office Action, which rejects claim 27 over Makimura et al. It would have been obvious to one having ordinary skill in the art to use different colors to create various design patterns, or to dye the fiber with one dye, to save money, which would produce different color components.

Response to Arguments

Response to Arguments

22. Applicant's arguments filed August 17, 2001, have been fully considered but they are not persuasive. The Applicant argues (Amendment A, page 10) that the Makimura et al. fiber is completely different from the claimed invention since the claimed invention does not dissolve a third component to produce the fiber bundle. First, with respect to the multi-component fiber, the Applicant recites the fiber comprises at least one elastic component and at least one non-elastic component with different solubility parameters in an unocclusive arrangement. As set forth above, the remaining limitations, i.e., that the elastic component is elastically deformed and capable of substantially complete recovery, and that the inelastic component is plastically deformed and maintains the same length upon release of tension, are not given patentable weight. The claimed article is the bicomponent fiber itself before the treatment has been applied. Thus, plastically deforming and elastically deforming the fibers under tension, is a process applied to the multicomponent to separate the components and does not add structure to the multi-component fiber itself. Further, the third component, which dissolves to split the fibers, is not excluded from the fiber claimed by the Applicant since the claims do not limit the fiber to the two claimed components.

With respect to the fiber bundles taught by Makimura et al. and the fiber bundles in the claimed invention, the Applicant argues (Amendment A, pages 10 – 11) that the processes to produce the fiber bundle are different. While this is true, that Makimura et al. dissolves a third component to form a two-component fiber bundle the process to produce the product is irrelevant to the claimed product. As set forth above, patentability is determined based on the product itself and not the method of making. The fiber bundle of Makimura et al. meets the structural

Art Unit: 1771

limitations of the fiber bundle recited in claims 17 – 33 and 63 – 65. Thus, the rejection is maintained.

23. The Applicant's argues (Amendment A, page 14) that it would not be obvious to dye the components different colors. However, it is well known to dye fabrics different shades depending on the desired use of the fabric. It would be obvious to one having ordinary skill in the art to dye the fabric different colors to create various designs or to hide stains and imperfections in the fabric. Also, the different polymer components in the multicomponent fiber will inherently dye to a different shade or color when a single dye is used. Thus, it is well known to dye materials different colors for various reasons and it would be obvious to anyone having ordinary skill in the art to dye the fabric different colors to produce various designs in the fabric for functional or aesthetic reasons. Further, the fact that the color would change upon stretching the fiber is inherent to the fiber itself. First, the dye is not uniformly spread throughout the fiber, so when it is stretched, the color changes since the same amount of dye is spread throughout a larger surface area. Secondly, stretching the fiber rearranges the polymer structure which will also rearrange the location of the dye molecules producing a different color. The argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Therefore, the rejection is maintained.

Art Unit: 1771

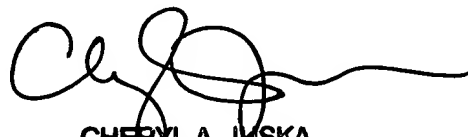
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (9:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jenna-Leigh Befumo
November 4, 2001



CHEYL A. JUSKA
PRIMARY EXAMINER